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Case Report

Spontaneous bilateral femoral neck fractures after uremic convulsion: a case report

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Abstract: Simultaneous bilateral spontaneous femoral neck fractures are unusual injury as for as mechanism of injury is concerned. They have been reported to occur following major trauma, or as a result of primary or secondary bone pathology. In this case report we describe the first time in literature bilateral femoral neck fracture in a patient who had uremic convulsion after prolonged use of analgesic in the form of diclofenac sodium for more than 3 years.
Keywords: Bilateral Fracture, Neck of Femur, Hyper uremic Convulsion

INTRODUCTION:

Spontaneous bilateral femoral neck fracture has not been discussed much in literature and only few cases are reported [1]. Simultaneous bilateral spontaneous femoral neck fractures are unusual injury as for as mechanism of injury is concerned. These types of injuries associated with an underlying condition which may lead to impaired bone mineralization, triggered by an increased bone stress & mechanism of injury may due to a violent muscle contraction [1, 2], seizures, electric shock [3]. They are mostly associated with bone metabolism disorders like chronic steroid use, renal osteodystrophy, and hypocalcaemia [4]. Celiac disease, hyper para thyroidism [4] primary or metastatic tumours and hormonal disorders [5].

In 1944, two Brazilians, Silva and Barros reported three cases of this kind of fracture in a Psychiatric magazine [6]. Powell states that there is no recent publication on this injury related to this kind of treatment [7].

CASE DETAIL:

A 55 years old male, was brought to the emergency department at Acharya Vinoba Bhave Rural Hospital; Wardha Maharashtra, with complaints of chronic back ache and inability to bear weight after an episode of generalized convulsions and momentary loss of consciousness. On clinical examination; he was slightly drowsy with Glasgow coma scale of 13/15 and normal vital signs. During the last few months he was feeling slightly unwell and less energetic. There is no previous history of fits or convulsions. On physical examination it was suggestive of both hips were in an external rotation posture and hip range of movements was painful, tenderness present over bilateral hip joint, neurovascular status was inact. Blood investigations revealed low haemoglobin (6.8 gms%), elevated blood urea (406mg/dl), high creatinine (5.6mg/dl), low serum calcium and vitamin D level with low albumin (3.1gm per litre).Renal ultrasonography showed small sized kidneys with relatively thin cortico medullary junction, uraemia was explained to be secondary to renal impairment Bone density was measured and was normal, both at the pelvis and the spine levels. X-ray of the pelvis with both the hip suggestive of bilateral sub capital fracture neck of femur. (Figure A & B)Few days later, after correcting haemoglobin and kidney function, he was operated upon; fractures were reduced and fixed bilaterally utilizing sliding screw and plate. Bone biopsy from the fracture area came later as normal bone structure. he was also advised regular follow up . Six months later he showed satisfactory clinical and radiographic healings of the fractures with improvement of her haemoglobin and renal functions.

Fig A) X – ray Antero – posterior View suggestive of Bilateral Neck Femur Fracture

Fig B) X – ray Lateral View suggestive of Bilateral Neck Femur Fracture

DISCUSSION:

Bilateral simultaneous fracture of the femoral neck is extremely rare [1, 4]. Reported causes include severe trauma, primary or secondary bone diseases like osteomalacia, renal osteodystrophy, and myeloma [2, 5]. Convulsions due to electric shock, eclampsia, hypocalcaemia, have been reported rarely as a cause of femoral neck fracture [1, 3]. Diagnosis of bilateral hip fracture can be delayed in post octal phase [8]. Fractures as a consequence of convulsive seizures without direct trauma occur in 0.3% of the cases [9]. Injuries encountered include posterior dislocation of shoulder, fracture dislocation of shoulder, dislocation of hip, and fracture of hip [5].

Early recognition is very important to minimise complications associated with delayed treatment of intracapsular hip fractures [5]. Physicians treating patients with seizures should be aware of the injuries, which could result from severe and prolonged seizures. A high index of suspicion is necessary and musculoskeletal pain after prolonged seizure needs adequate clinical and radiological examination.

Dedichen [10] reported in 1946 a case of bilateral fracture of femoral neck among 2428 patients. Fang [7], in 1958, mentions two cases of this kind of injury among 1100 patients receiving electro-convulsive therapy. Kelly [3] also reported in 1954 one case among 2200 patients who had electric therapy due to psychic problems. In Brazil, Silva and Barros [6] reported in 1944 three cases of bilateral fracture among 1843 patients who undergone electro-convulsive therapy. In an evaluation of Rochester e Minnesota patients, between 1928 and 1982, 1701 proximal femur fractures were found, only one of them bilateral. Pathological fractures as a consequence of convulsive therapy occur in 0.3 % of the cases [11].

Few reports of this kind of injury were demonstrated in previously healthy subjects [17]. Atkinson mentioned two cases due to fall of a heavy object over the femur and one due to fall from high [1] one after a vehicular accident. In 1990, Slater reported out of ten cases of bilateral femoral neck fracture one case due to accidental electric shock, [12] Currently most of the fractures of the femoral neck are due to previously existing bone metabolism diseases, among them renal impairment and enterectomy inducing hypocalcemic convulsion [14, 13] Marfan's syndrome late osteogenesis imperfecta [18], ostemalacia due to aluminium and magnesium containing anti-acids [17]. Chronic alcoholism and hepatic cirrhosis [16]. Our case had uremic encephalopathy and developed convulsions. Patient had taken diclofenac sodium for 3 years for low back pain following which he developed deranged kidney profile.

It is recommended a physical and radiographic examination after convulsion or a convulsive shock looking for possible fractures. The mechanism of injury is usually related to uncoordinated muscle contraction. Management of this kind of patient depends on several issues, among them the time between the fracture and the surgery [1]. Morrey and O´Brien [19] performed subtrochanteric valgus osteotomy with fixation using plate and screws in a patient three weeks after the fracture. Nanda and Mohanti, treated one patient one week after the fracture with Smith-Petersen plate and nail [1]. Atkinson [20] opted for Knowles pins in two patients with bilateral femoral neck. Taylor used internal fixation with compression [22] and Madhok performed bipolar hip arthroplasty [21] in patients presenting the same injury.

There are several kinds of treatment modalities are indicated a total or partial arthroplasty for this injury, being generally since chances of healing the fracture are usually poor and avascular necrosis is higher than in normal patients. Additionally life expectancy is limited. However, bone fixation is

indicated in young patients with a longer life expectancy, and this led us to choose this more conservative option.

CONCLUSION

Bilateral hip fracture can occur as a rare complication of seizures. Musculoskeletal injuries possibly occur secondary to seizure and are sometimes missed or diagnosed late. Musculoskeletal examination is important in patients who had prolonged and severe seizure. Physicians treating such patients should have a high index of suspicion in order to achieve an early diagnosis and reduce morbidity.

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